

FIG. 1

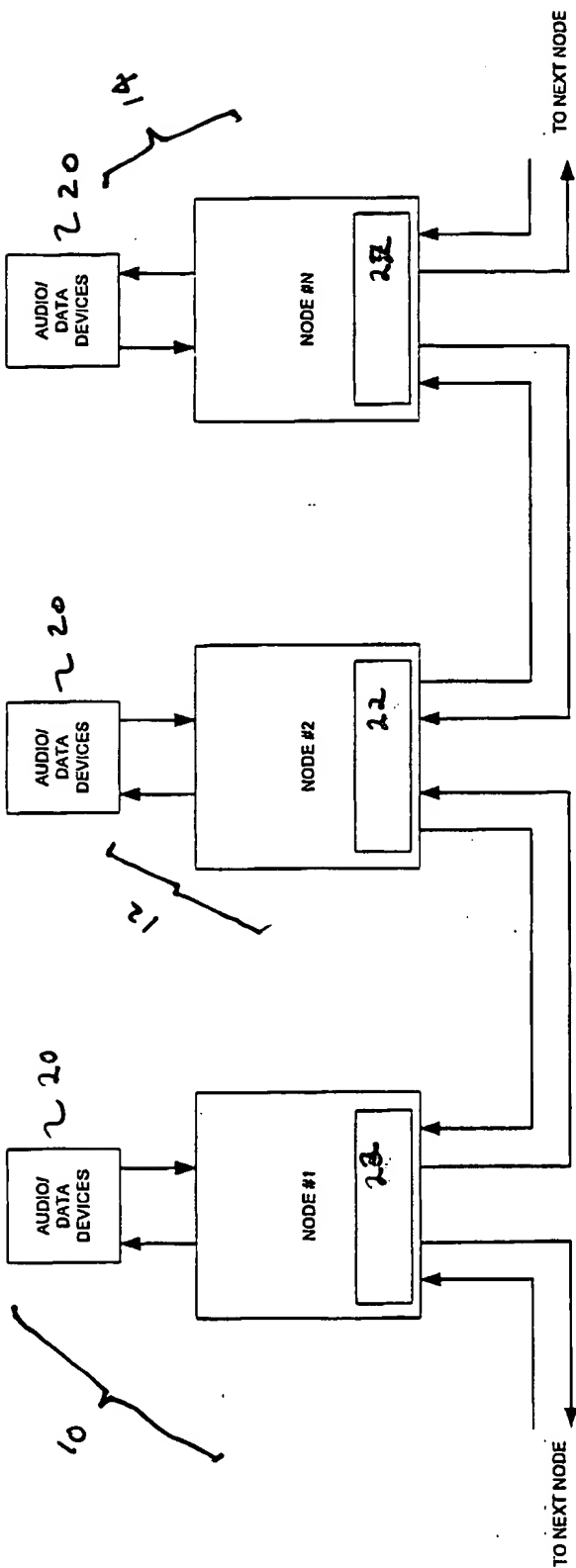
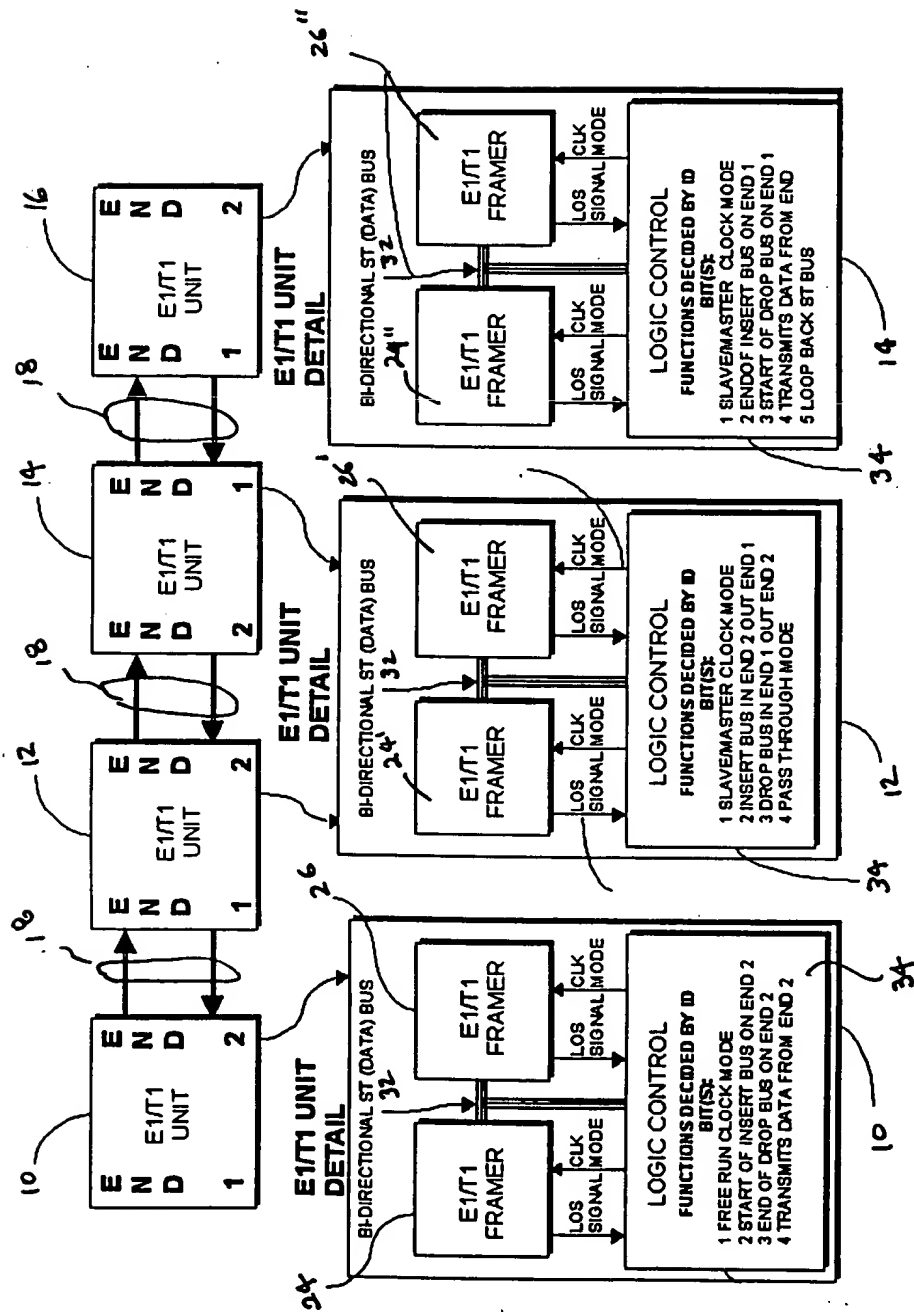


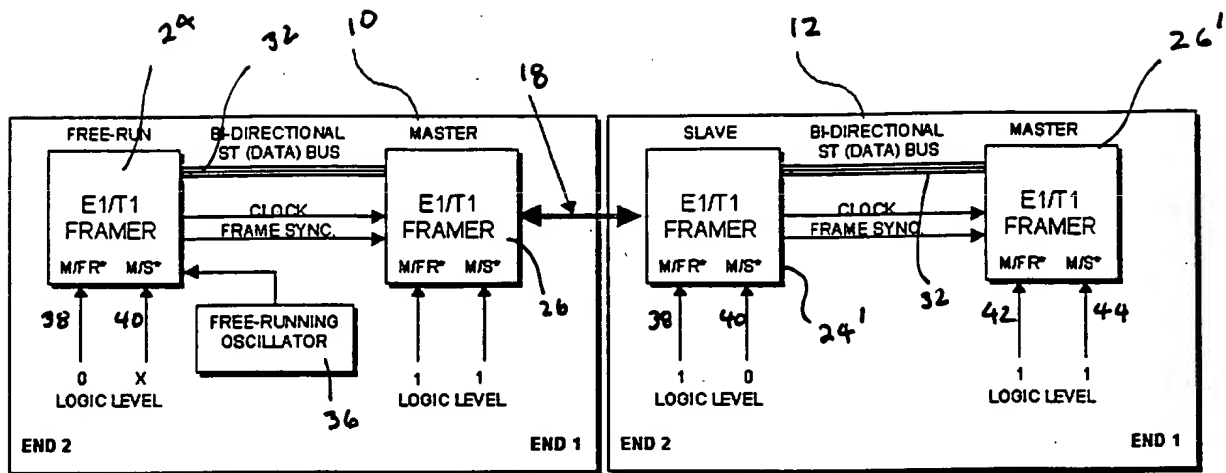
FIG. 1

#3



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FIG 3



FRAMER CHIP
MODE CONTROL
TABLE

| INPUT SIGNAL PIN NAME | FREE RUN | SLAVE | FREE RUN | MASTER | MODE |
|---------------------------|-------------|-------|----------|--------|------|
| MASTER-SLAVE/NOT FREE RUN | 0 | 1 | 0 | 1 | |
| MASTER-NOT SLAVE | X | 0 | X | 1 | |
| | LOGIC LEVEL | | | | |

Fig. 3 A

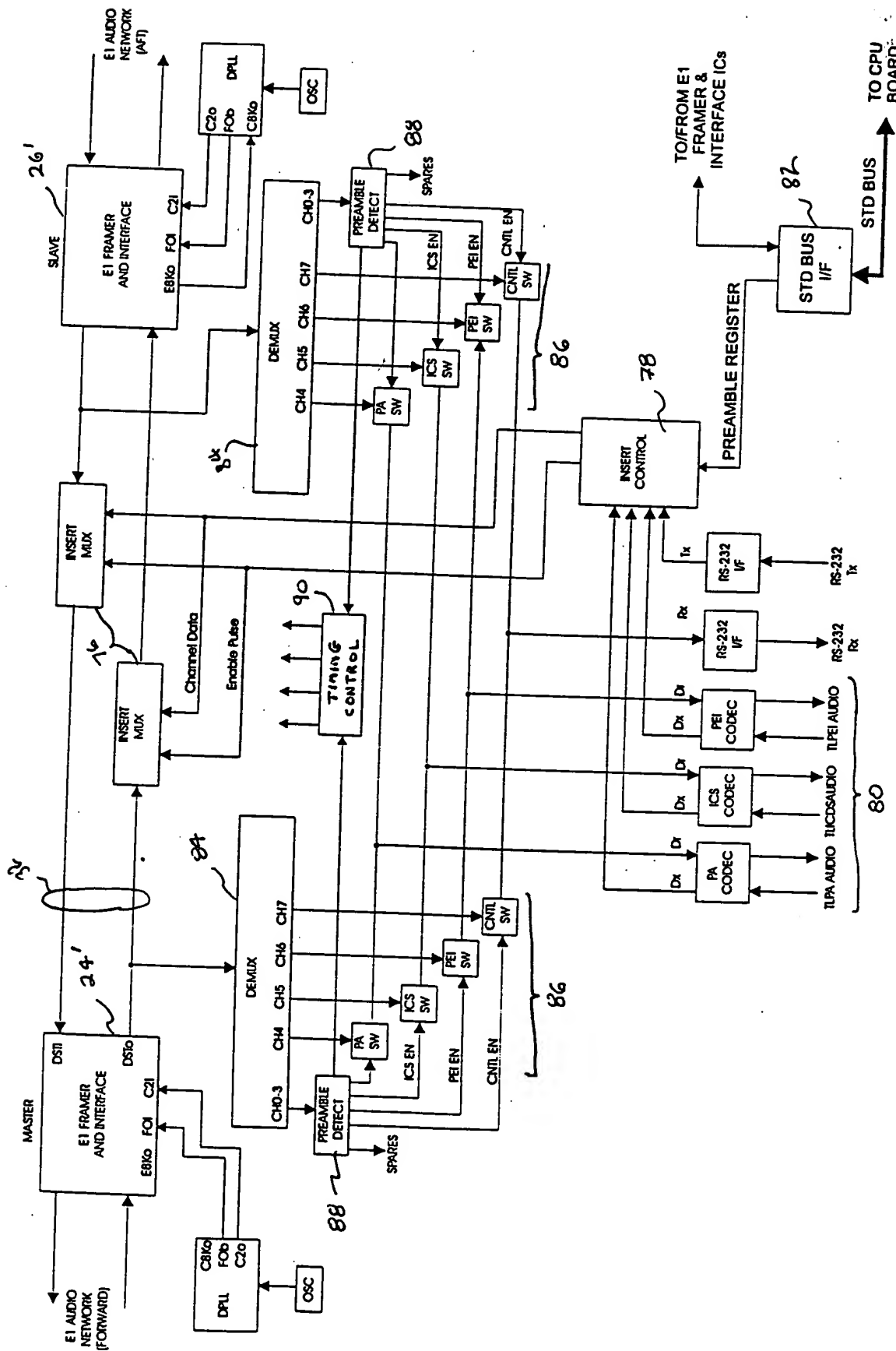


FIG. 4

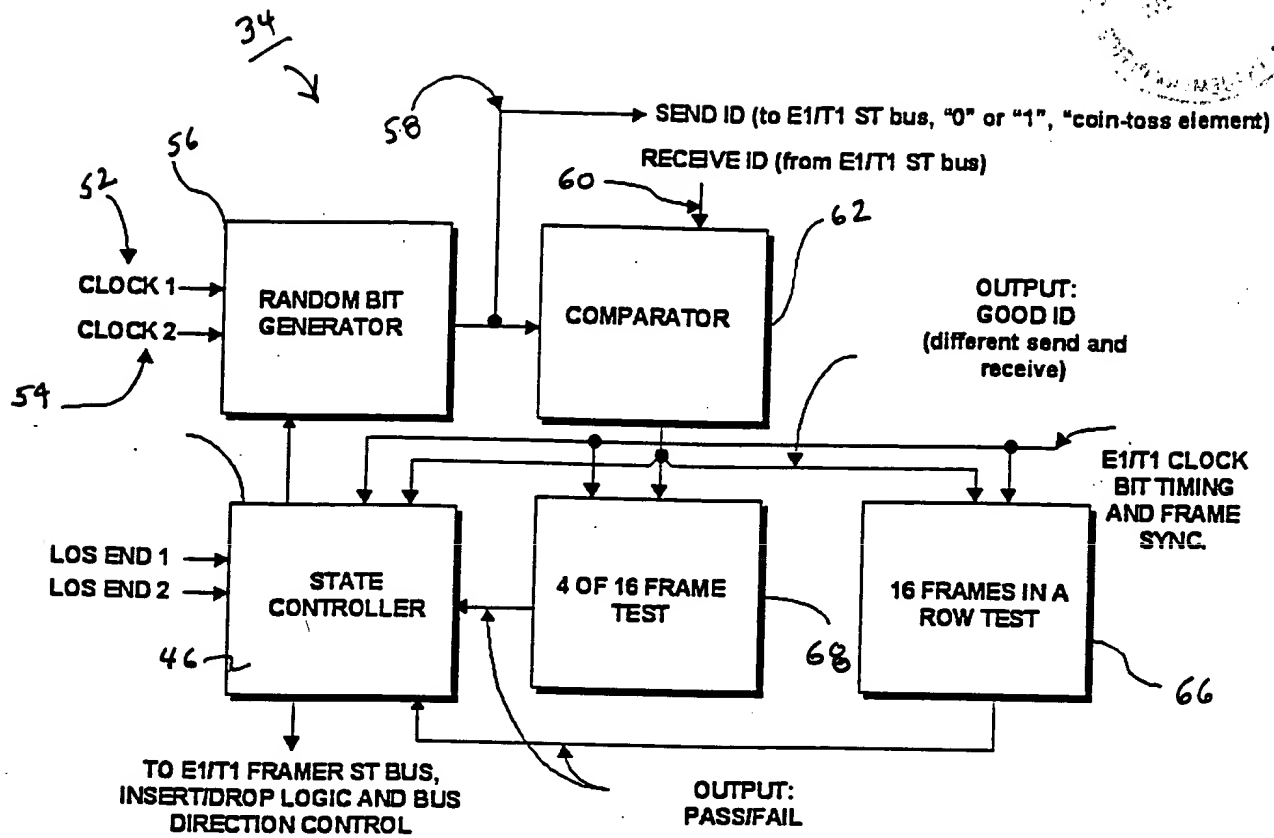


Fig. 5

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graph TD
    WAIT[50 WAIT  
WAITS FOR THE LOS  
TO BECOME STABLE  
AND FOR THE UNITS  
SELF TEST TO END]
    VERIFY[70 VERIFY  
ARE THE SEND AND  
RECEIVE ID BITS  
DIFFERENT? IF YES THE  
END UNITS HAVE  
FINISHED THE ID  
EXCHANGE]
    ID_EXCHANGE[64 ID EXCHANGE  
THE ID EXCHANGE  
TAKES PLACE UNTIL  
THEY ARE DIFFERENT  
FOR 16 CONSECUTIVE  
FRAMES]
    RUN[72 RUN  
THIS IS THE NORMAL  
OPERATIONAL MODE]

    WAIT -- "THE ID BITS ARE THE SAME FROM BOTH ENDS" --> VERIFY
    WAIT -- "THE LOS SIGNAL IS PRESENT FROM ONLY ONE END SO THIS UNIT TAKES PLACE IN THE ID EXCHANGE" --> ID_EXCHANGE
    VERIFY -- "THE LOS SIGNAL IS PRESENT FROM BOTH ENDS SO THIS UNIT DOES NOT TAKE PLACE IN THE ID EXCHANGE" --> WAIT
    VERIFY -- "THE LOS SIGNAL WAS LOST FROM END 1 AND END 2 OR THE RECEIVED ID WAS THE SAME AS THE ONE BEING SENT FOR AT LEAST 4 OUT OF 16 FRAMES" --> ID_EXCHANGE
    ID_EXCHANGE -- "THE SEND ID AND RECEIVE ID HAVE BEEN DIFFERENT FOR 16 CONSECUTIVE FRAMES" --> VERIFY
    ID_EXCHANGE -- "THE LOS SIGNAL WAS LOST FROM END 1 AND END 2 OR THE RECEIVED ID WAS THE SAME AS THE ONE BEING SENT FOR AT LEAST 4 OUT OF 16 FRAMES" --> RUN
    VERIFY -- "THE IDS ARE DIFFERENT FROM BOTH ENDS" --> RUN
  
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Fig. 6

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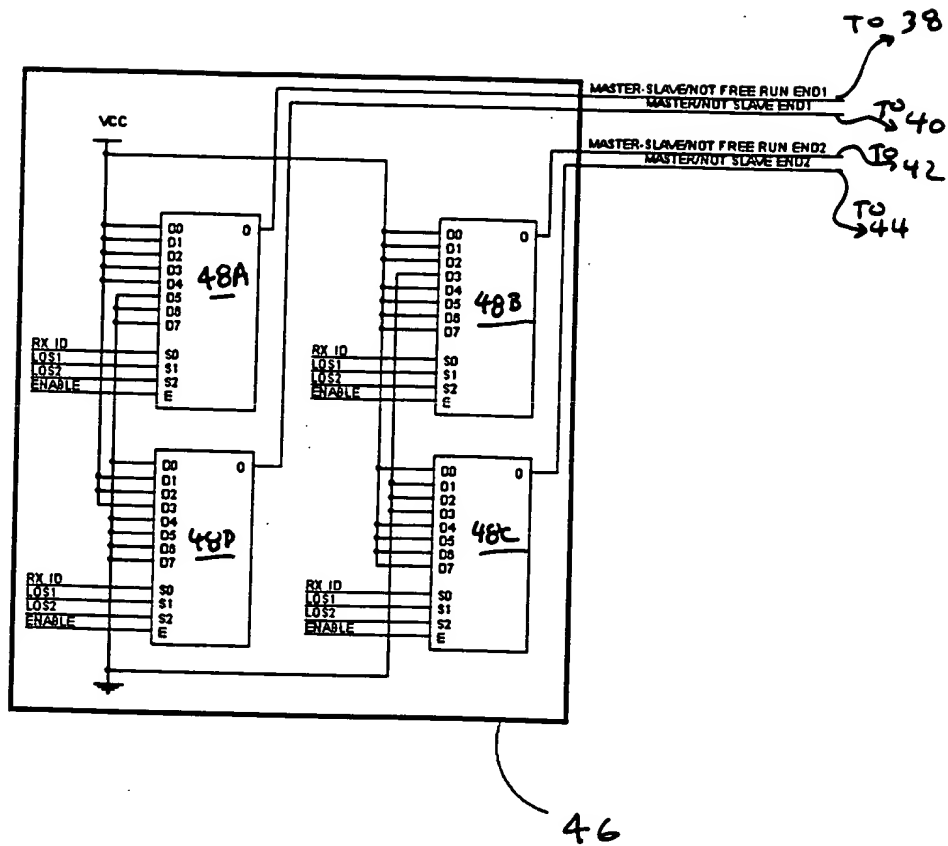


Fig. 7

Fig 7A

Mode Table

| LOS1 | LOS2 | Rx | Address | Master | Slave | Free-run |
|------|------|----|---------|--------|-------|----------|
| 0 | 0 | 0 | 0 | end 2 | end 1 | |
| 0 | 0 | 1 | 1 | end 1 | end 2 | |
| 0 | 1 | 0 | 2 | end 1 | end 2 | |
| 0 | 1 | 1 | 3 | end 1 | | end 2 |
| 1 | 0 | 0 | 4 | end 2 | end 1 | |
| 1 | 0 | 1 | 5 | end 2 | | end 1 |
| 1 | 1 | 0 | 6 | | | |
| 1 | 1 | 1 | 7 | | | |

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